

This listing of claims will replace all prior versions of claims in the application.

Claim 1. (currently amended) A coated substrate comprising:
an antireflective composition layer comprising a basic material, ~~and a crosslinker and a~~
~~resin, and~~
a photoresist layer over the antireflective composition layer.

Claim 2. (original) The substrate of claim 1 wherein the basic material has a
pKa of about 3 or greater.

Claim 3. (original) The substrate of claim 1 wherein the basic material has a
pKa of about 6 or greater.

Claim 4. (original) The substrate of claim 1 wherein the basic material has a
pKa of about 9 or greater.

Claim 5. (currently amended) The substrate of ~~claim 1 any one of claims 1~~
~~through 4~~ wherein the basic material contains one or more N, O or S atoms.

Claim 6. (currently amended) The substrate of ~~claim 1 any one of claims 1~~
~~through 5~~ wherein the basic material contains one or more amine groups.

Claim 7. (currently amended) The substrate of ~~claim 1 any one of claims 1~~
~~through 6~~ wherein the basic material contains one or more hydroxy, ether, or sulfide groups.

Claim 8. (currently amended) The substrate of ~~claim 1 any one of claims 1~~
~~through 7~~ wherein the basic material has a molecular weight of less than about 500.

Claim 9. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 7~~ wherein the basic material is a polymeric material

Claim 10. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 9~~ wherein the antireflective composition is crosslinked.

Claim 11. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 10~~ wherein the antireflective composition comprises an acid or acid generator compound.

Claim 12. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 11~~ wherein the antireflective composition comprises a thermal acid generator and a photoacid generator compound.

Claim 13. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 12~~ wherein the antireflective layer comprises a resin distinct from ~~a polymeric~~ the basic material.

Claim 14. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 13~~ wherein the antireflective layer comprises aromatic groups.

Claim 15. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 13~~ wherein the antireflective layer comprises anthracenyl, naphthylene or phenyl groups.

Claim 16. (currently amended) The substrate of claim 1 ~~any one of claims 1 through 15~~ wherein the photoresist layer is a chemically-amplified photoresist.

Claim 17. (original) The substrate of claim 16 wherein the photoresist comprises a resin that contains acetal groups.

Claim 18. (currently amended) A method for forming a photoresist relief image, comprising:

applying an antireflective composition on a substrate, the antireflective composition comprising a basic material, and a crosslinker and a resin,

applying a photoresist layer over the antireflective composition layer; and
exposing and developing the photoresist layer to provide a resist relief image.

Claim 19. (original) The method of claim 18 wherein the antireflective layer is crosslinked prior to application of the photoresist layer.

Claim 20. (original) The method of claim 18 wherein the antireflective layer is thermally cured prior to application of the photoresist layer.

Claim 21. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 23~~ wherein the basic material has a pKa of about 3 or greater.

Claim 22. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 23~~ wherein the basic material has a pKa of about 6 or greater.

Claim 23. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 23~~ wherein the basic material has a pKa of about 9 or greater.

Claim 24. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 23~~ wherein the basic material contains one or more N, O or S atoms.

Claim 25. (currently amended) The method of claim 18 ~~any one of claims 18 through 24~~ wherein the basic material contains one or more amine groups.

Claim 26. (currently amended) The method of claim 18 ~~any one of claims 18 through 24~~ wherein the basic material contains one or more hydroxy, ether, or sulfide groups.

Claim 27. (currently amended) The method of claim 18 ~~any one of claims 18 through 24~~ wherein the basic material has a molecular weight of less than about 500.

Claim 28. (currently amended) The method of claim 18 ~~any one of claims 18 through 25~~ wherein the basic material is a polymeric material

Claim 29. (currently amended) The method of claim 18 ~~any one of claims 18 through 28~~ wherein the antireflective composition comprises an acid or acid generator compound.

Claim 30. (currently amended) The method of claim 18 ~~any one of claims 18 through 29~~ wherein the antireflective composition comprises a thermal acid generator and a photoacid generator compound.

Claim 31. (currently amended) The method of claim 18 ~~any one of claims 18 through 30~~ wherein the antireflective layer comprises a resin distinct from ~~a polymeric~~ the basic material.

Claim 32. (currently amended) The method of claim 18 ~~any one of claims 18 through 31~~ wherein the antireflective layer comprises aromatic groups.

Claim 33. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 32~~ wherein the photoresist layer is exposed with patterned radiation having a wavelength of about 260 nm or less.

Claim 34. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 32~~ wherein the photoresist layer is exposed with patterned radiation having a wavelength of about 248 nm, 193 nm or 157 nm.

Claim 35. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 32~~ wherein the photoresist layer is exposed with radiation having a wavelength of about 248 nm and the antireflective layer comprises anthracenyl or naphthylene groups.

Claim 36. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 32~~ wherein the photoresist layer is exposed with radiation having a wavelength of about 193 nm and the antireflective layer comprises phenyl group.

Claim 37. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 36~~ wherein the photoresist layer is a positive chemically-amplified photoresist.

Claim 38. (currently amended) The method of ~~claim 18~~ ~~any one of claims 18 through 37~~ wherein the photoresist comprises a resin that contains acetal groups.

Claims 39-44. (cancelled)

Claim 45. (new) The substrate of claim 1 wherein the antireflective composition comprises separate components of 1) a resin, 2) a crosslinker, 3) a basic additive and 4) an acid or generator compound.

Claim 46. (new) The substrate of claim 1 wherein the the antireflective composition comprises separate components of 1) a resin, 2) a crosslinker, 3) a basic additive and 4) a thermal acid generator compound.

Claim 47. (new) The method of claim 18 wherein the antireflective composition comprises separate components of 1) a resin, 2) a crosslinker, 3) a basic additive and 4) an acid or generator compound.

Claim 48. (new) The method of claim 18 wherein the the antireflective composition comprises separate components of 1) a resin, 2) a crosslinker, 3) a basic additive and 4) a thermal acid generator compound.